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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/533,693	12/14/2005	Peter Vanderslice	TEX4542P0481US	6132

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EXAMINER	
MURRAY, JEFFREY H	

ART UNIT	PAPER NUMBER
1624	

MAIL DATE	DELIVERY MODE
11/25/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/533,693	VANDERSLICE ET AL.	
	Examiner	Art Unit	
	JEFFREY H. MURRAY	1624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 August 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-36* is/are pending in the application.

4a) Of the above claim(s) *15, 17, 18, 20-23 and 25-36* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-14, 16, 19 and 24* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *5/3/2005*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This action is in response to an election from a restriction requirement filed on August 8, 2008. There are thirty-six claims pending and sixteen claims under consideration. Claims 15, 17, 18, 20-23, and 25-36 have been withdrawn. This is the first action on the merits. This invention is directed generally to combination products of and methods of co-administering compounds that inhibit the binding of $\alpha_4\beta_1$ integrin to its receptors, for example VCAM-1 (vascular cell adhesion molecule-I) and fibroneetin and other therapeutic compounds. The invention also relates to the use of such compositions and methods for the control or prevention of disease states in which $\alpha_4\beta_1$ is involved. Election was made **without** traverse in the reply filed on August 8, 2008.

2. In addition to the non-elected claims mentioned in the restriction requirement, examiner has withdrawn claims 15, 17, and 18 due to the species of the aforementioned claims not falling within the restriction requirement. The elected group by the applicants allows for a pyridin-2-one ring system. The three previously mentioned claims contain a bicyclic ring system, not the monocyclic pyridine-2-one ring. Therefore this restriction is considered proper and thus made **FINAL**.

Priority

3. Acknowledgment is made of applicant's claim for domestic priority. The current application, 10/533,693, filed on December 14, 2005, is a national stage application of PCT/US03/35526, filed on November 7, 2003, and claims domestic priority to U.S. Provisional Applications 60/424,928, filed on November 8, 2002.

Specification

4. Applicant is reminded of the proper content of an Abstract of the Disclosure.

In chemical patent abstracts for compounds or compositions, the general nature of the compound or composition should be given as well as its use, *e.g.*, "The compounds are of the class of alkyl benzene sulfonyl ureas, useful as oral anti-diabetics." Exemplification of a species could be illustrative of members of the class. For processes, the type reaction, reagents and process conditions should be stated, generally illustrated by a single example unless variations are necessary. Complete revision of the content of the abstract is required on a separate sheet.

5. The specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any of the errors of which applicant may become aware of in the specification.

Claim Objections

6. Claims 1-13 are objected to because of the following informalities:

Claims 1-13 are objected to for containing non-elected subject matter within the claims. Appropriate correction is required.

Claim Rejections - 35 USC § 112, 1st paragraph

7. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

8. Claims 1-14, 16, 19 and 24 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The MPEP states that the purpose of the written description requirement is to ensure that the inventor had possession, as of the filing date of the application, of the specific subject matter later claimed by him. The courts have stated:

> "To fulfill the written description requirement, a patent specification must describe an invention and do so in sufficient detail that one skilled in the art can clearly conclude that "the inventor invented the claimed invention." *Lockwood v. American Airlines, Inc.*, 107 F.3d 1565, 1572, 41 USPQ2d 1961, 1966 (Fed. Cir. 1997); *In re Gostelli*, 872 F.2d 1008, 1012, 10 USPQ2d 1614, 1618 (Fed. Cir. 1989) ("[T]he description must clearly allow persons of ordinary skill in the art to recognize that [the inventor] invented what is claimed."). Thus, an applicant complies with the written description requirement "by describing the invention, with all its claimed limitations, not that which makes it obvious," and by using "such descriptive means as words, structures, figures, diagrams, formulas, etc., that set forth the claimed invention." *Lockwood*, 107 F.3d at 1572, 41 USPQ2d at 1966." *Regents of the University of California v. Eli Lilly & Co.*, 43 USPQ2d 1398.

The MPEP lists factors that can be used to determine if sufficient evidence of possession has been furnished in the disclosure of the application. These include "level of skill and knowledge in the art, partial structure, physical and/or chemical properties,

functional characteristics alone or coupled with a known or disclosed correlation between structure and function, and the method of making the claimed invention. Disclosure of any combination of such identifying characteristics that distinguish the claimed invention from other materials and would lead one of skill in the art to the conclusion that the applicant was in possession of the claimed species is sufficient." MPEP § 2163.

Further, for a broad generic claim, the specification must provide adequate written description to identify the genus of the claim. In Regents of the University of California v. Eli Lilly & Co. the court stated:

> "A written description of an invention involving a chemical genus, like a description of a chemical species, 'requires a precise definition, such as by structure, formula, [or] chemical name,' of the claimed subject matter sufficient to distinguish it from other materials." Fiers, 984 F.2d at 1171,25 USPQ2d 1601; In re Smythe, 480 F.2d 1376, 1383, 178 USPQ 279, 284985 (CCPA 1973) ("In other cases, particularly but not necessarily, chemical cases, where there is unpredictability in performance of certain species or subcombinations other than those specifically enumerated, one skilled in the art may be found not to have been placed in possession of a genus ...") Regents of the University of California v. Eli Lilly & Co., 43 USPQ2d 1398.

The MPEP further states that if a biomolecule is described only by a functional characteristic, without any disclosed correlation between function and structure of the sequence, it is "not sufficient characteristic for written description purposes, even when accompanied by a method of obtaining the claimed sequence." MPEP § 2163. The MPEP does state that for a generic claim the genus can be adequately described if the disclosure presents a sufficient number of representative species that encompass the genus. MPEP § 2163. If the genus has a substantial variance, the disclosure must describe a sufficient variety of species to reflect the variation within that genus. See

MPEP § 2163. Although the MPEP does not define what constitute a sufficient number of representative species, the courts have indicated what do not constitute a representative number of species to adequately describe a broad generic. In *Gostelli*, the courts determined that the disclosure of two chemical compounds within a subgenus did not describe that subgenus. *In re Gostelli*, 872, F.2d at 1012, 10 USPQ2d at 1618. In the instant case, the claims are drawn to a composition that inhibits the binding of $\alpha_4\beta_1$ integrin which is useful as a medicament. The factors considered in the Written Description requirement are the following:

1) Level of skill and knowledge in the art. With regards to the effect of synthesizing and substituting various ring systems, the level of skill is high, and the knowledge is low, as the chemistry of attaching potentially sterically bulky or electronically unstable rings to other rings of the same are unpredictable based on the substituent groups, electronic effects, steric effects, etc.

2) Partial structure. The structure must be a pyridine-2-one urea system which may be attached to other cyclic ring systems. The specification describes a few species which lack sufficient variety to describe the myriad of possible ring systems embraced by the generic structure.

3) Physical and/or chemical properties and (4) Functional characteristics. The compositions must inhibit the binding of $\alpha_4\beta_1$ integrin.

5) Method of making the claimed invention. Methods of making a pyridine-2-one urea is known in the art, however the methods of making the myriad of compounds within the asserted claims is not known. Further, there is no disclosure as to what is the

essential structure that must be maintained throughout the compounds to retain the claimed activity.

As stated supra, the MPEP states that written description for a genus can be achieved by a representative number of species within a broad generic. It is unquestionable that claim 1, for example, is a broad generic, with respect to several possibilities attached to the pyridine-2-one urea system. The possible structural variations are limitless within this claim, where several positions are defined by generic structures. Though the claims may recite some functional characteristics, the claims lack written description because there is no disclosure of a correlation between function and structure of the compounds beyond compounds disclosed in the examples in the specification. Moreover, the specification lacks a sufficient variety of species to reflect this variance in the genus since the specification does not provide any examples. The specification is void of sufficient variety of ring systems to describe the myriad embraced by the genus.

The description requirement of the patent statue requires a description of an invention, not an indication of a result that one might achieve if one made that invention. See *In re Wilder*, 736, F.2d 1516, 1521, 222 USPQ 369, 372-73 (Fed. Cir. 1984) (affirming rejection because the specification does "little more than outlin[e] goals appellants hope the claimed invention achieves and the problems the invention will hopefully ameliorate.") Accordingly, it is deemed that the specification fails to provide adequate written description for the genus of the claims and does not reasonably

convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the entire scope of the claimed invention.

9. Claims 1-14, 16, 19 and 24 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for (3S)-3-[({[1-(2-chlorobenzyl)-4-hydroxy-5-methyl-2-oxo-1,2-dihydropyridin-3-yl]amino}carbonyl)amino]-3-(4-methylphenyl)propanoic acid, does not reasonably provide enablement for any other compounds or compositions within the broad Claim 1. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make the invention commensurate in scope with these claims.

10. The test of enablement is whether one skilled in the art could make and use the claimed invention from the disclosures in the application coupled with information known in the art without undue experimentation. (United States v. Teletronics Inc., 8 USPQ2d 1217 (Fed. Cir. 1988)). Whether undue experimentation is needed is not based on a single factor, but rather a conclusion reached by weighing many factors (See Ex parte Forman 230 USPQ 546 (Bd. Pat. App. & Inter. 1986) and In re Wands, 8 USPQ2d 1400 (Fed. Cir. 1988).

These factors include the following:

1) *Amount of guidance provided by Applicant.* The Applicant has not demonstrated within the application how to make these pyridine-2-one ureas, but are enabled for the urea that already appears in the prior art. There is no working example of any composition shown within the current specification. These cannot be simply willed into existence. As was stated in *Morton International Inc. v. Cardinal Chemical*

Co., 28 USPQ2d 1190 "The specification purports to teach, with over fifty examples, the preparation of the claimed compounds with the required connectivity. However...there is no evidence that such compounds exist...the examples of the '881 patent do not produce the postulated compounds...there is...no evidence that such compounds even exist." The same circumstance appears to be true here. There is no evidence that these compositions have been synthesized nor shown how to make or use the compositions. Hence, applicants must show that compositions can be made, or limit the claims accordingly.

2) *Unpredictability in the art.* It is well established that "the scope of enablement varies inversely with the degree of unpredictability of the factors involved" and physiological activity is generally considered to be an unpredictable factor. (USPQ 18, 24 (CCPA 1970). See *In re Fisher*, 427 F.2d 833, 839, 166.

Chemistry is unpredictable. See In Re Marzocchi and Horton 169 USPQ at 367 paragraph 3:

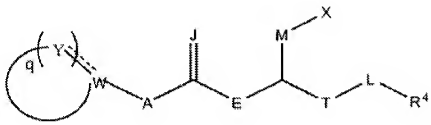
> "Most non-chemists would probably be horrified if they were to learn how many attempted syntheses fail, and how inefficient research chemists are. The ratio of successful to unsuccessful chemical experiments in a normal research laboratory is far below unity, and synthetic research chemists, in the same way as most scientists, spend most of their time working out what went wrong, and why. Despite the many pitfalls lurking in organic synthesis, most organic chemistry textbooks and research articles do give the impression that organic reactions just proceed smoothly and that the total synthesis of complex natural products, for instance, is maybe a labor-intensive but otherwise undemanding task. In fact, most syntheses of structurally complex natural products are the result of several years of hard work by a team of chemists, with almost every step requiring careful optimization. The final synthesis usually looks quite different from that originally planned, because of unexpected difficulties encountered in the initially chosen synthetic sequence. Only the seasoned practitioner who has experienced for himself the many failures and frustrations which the

> development (sometimes even the repetition) of a synthesis usually implies will be able to appraise such work .....Chemists tend not to publish negative results, because these are, as opposed to positive results, never definite (and far too copious)." Dorwald F. A. *Side Reactions in Organic Synthesis*, 2005, Wiley: VCH, Weinheim pg. IX of Preface.

3) *Number of working examples*. The compound core depicted with specific substituents represents a narrow subgenus for which applicant has provided sufficient guidance to make and use; however, this disclosure is not sufficient to allow extrapolation of the limited examples to enable the scope of the compounds instantly claimed or preventive agents. Applicant has provided no working examples of any compounds, compositions or pharmaceutically acceptable salts where the R variables were not those mentioned above in the present application.

Within the specification, "specific operative embodiments or examples of the invention must be set forth. Examples and description should be of sufficient scope as to justify the scope of the claims. *Markush* claims must be provided with support in the disclosure for each member of the *Markush* group. Where the constitution and formula of a chemical compound is stated only as a probability or speculation, the disclosure is not sufficient to support claims identifying the compound by such composition or formula." See MPEP 608.01(p).

4) *Scope of the claims*. The scope of the claims involves all of the thousands of compounds of the following formula:



Where A and E are nitrogen; J is oxygen, M is a carbon and the ring system is represented by a pyridi-2-one, thus the scope of claims is very broad.

5) *Nature of the invention.* This invention is directed generally to combination products of and methods of co-administering compounds that inhibit the binding of $\alpha_4\beta_1$ integrin to its receptors, for example VCAM-1 (vascular cell adhesion molecule-I) and fibroneetin and other therapeutic compounds. The invention also relates to the use of such compositions and methods for the control or prevention of disease states in which $\alpha_4\beta_1$ is involved.

6) *Level of skill in the art.* The artisan using Applicants invention would be a chemist with a Ph.D. degree, and having several years of bench experience.

MPEP §2164.01 (a) states, "A conclusion of lack of enablement means that, based on the evidence regarding each of the above factors, the specification, at the time the application was filed, would not have taught one skilled in the art how to make and/or use the full scope of the claimed invention without undue experimentation. *In re Wright*, 999 F.2d 1557,1562, 27 USPQ2d 1510, 1513 (Fed. Cir. 1993)." That conclusion is clearly justified here that Applicant is not enabled for making these compounds or compositions or treating the diseases mentioned.

11. Claim 19 is rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for a composition or a pharmaceutically acceptable salt thereof, does not reasonably provide enablement for any other compositions combined with "IL-5 antagonists, CCR-3 antagonists, corticosteroids, antihistamines, Leukotrine antagonists, COX-I and COX-II inhibitors, mast cell stabilizers, anti IL-5 and anti IgE antibodies, IL-5 synthesis and release inhibitors, TNF- a inhibitors, p38 MAP kinase inhibitors, tryptase inhibitors, anticytokine/antichemokine agents, vaccines, cromolyn, selectin antagonists, PDE 4 inhibitors, b-agonists, muscarininc antagonists and immunosuppressives, CD20 antagonists and syk tyrosine kinase inhibitors". The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make the invention commensurate in scope with these claims.

12. The test of enablement is whether one skilled in the art could make and use the claimed invention from the disclosures in the application coupled with information known in the art without undue experimentation. (*United States v. Teletronics Inc.*, 8 USPQ2d 1217 (Fed. Cir. 1988)). Whether undue experimentation is needed is not based on a single factor, but rather a conclusion reached by weighing many factors (See *Ex parte Forman* 230 USPQ 546 (Bd. Pat. App. & Inter. 1986) and *In re Wands*, 8 USPQ2d 1400 (Fed. Cir. 1988).

1) *Amount of guidance provided by Applicant.* In the current specification, Applicants have not demonstrated how to make any pyridine-2-ones. Within the specification, there are no examples, no description as to how to make the compounds

or compositions. No chemical synthetic scheme exists in the current application, nor the PCT or provisional application from which it depends. Applicant has provided no guidance, or provided any chemical or biological data and/or testing results of these particular compositions in combination with "IL-5 antagonists, CCR-3 antagonists, corticosteroids, antihistamines, Leukotrine antagonists, COX-I and COX-II inhibitors, mast cell stabilizers, anti IL-5 and anti IgE antibodies, IL-5 synthesis and release inhibitors, TNF- a inhibitors, p38 MAP kinase inhibitors, tryptase inhibitors, anticytokine/antichemokine agents, vaccines, cromolyn, selectin antagonists, PDE 4 inhibitors, b-agonists, muscarininc antagonists and immunosuppressives, CD20 antagonists and syk tyrosine kinase inhibitors" or a pharmaceutically acceptable salt thereof.

The quantity of experimentation needed to make or use the invention must be considered to determine if undue experimentation is present. Here applicants do not describe in any explicit detail what types of further active compounds have been combined with the compositions. As currently written, these "medicament active ingredients" could cover a plethora of various disciplines as the "medicament active ingredients" term is undefined.

2) Unpredictability in the art. It is well established that "the scope of enablement varies inversely with the degree of unpredictability of the factors involved", and physiological activity is generally considered to be an unpredictable factor. (USPQ 18, 24 (CCPA 1970). See *In re Fisher*, 427 F.2d 833, 839, 166.

Applicants have provided no chemical synthesis or biological testing of any

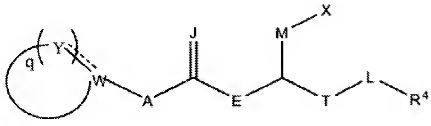
results where the compositions were combined with these additional "active compounds." Without this, one cannot simply infer that the results of the combination would be additive from the compositions or the active compounds alone. In many instances, the systematic screening of combinations of small molecules can reveal unexpected interactions between the pathways on which they act. (Borisy, et. al., Proceedings of the National Academy of Sciences of the United States of America, 100(13) 7977-7982.)

3) *Number of working examples*. The compound core depicted with specific substituents represent a narrow subgenus for which applicant has not provided sufficient guidance to make and use. In addition, this disclosure is not sufficient to allow extrapolation of the limited examples to enable the scope of the compounds instantly claimed or preventive agents. Applicant has provided no working examples of any compounds, compositions or pharmaceutically acceptable salts in the present application.

Within the specification, "specific operative embodiments or examples of the invention must be set forth. Examples and description should be of sufficient scope as to justify the scope of the claims. *Markush* claims must be provided with support in the disclosure for each member of the *Markush* group. Where the constitution and formula of a chemical compound is stated only as a probability or speculation, the disclosure is not sufficient to support claims identifying the compound by such composition or formula." See MPEP 608.01(p).

4) *Scope of the claims*. The scope of the claims involves all of the millions of

compositions of the following formula:



whereby A and E are nitrogen; J is oxygen, M is a carbon and the ring system is represented by a pyridi-2-one and the compound above is combined with a "IL-5 antagonists, CCR-3 antagonists, corticosteroids, antihistamines, Leukotrine antagonists, COX-I and COX-II inhibitors, mast cell stabilizers, anti IL-5 and anti IgE antibodies, IL-5 synthesis and release inhibitors, TNF- a inhibitors, p38 MAP kinase inhibitors, tryptase inhibitors, anticytokine/antichemokine agents, vaccines, cromolyn, selectin antagonists, PDE 4 inhibitors, b-agonists, muscarininc antagonists and immunosuppressives, CD20 antagonists and syk tyrosine kinase inhibitors" thus the scope of the claims is broad.

5) *Nature of the invention.* This invention is directed generally to combination products of and methods of co-administering compounds that inhibit the binding of $\alpha_4\beta_1$ integrin to its receptors, for example VCAM-1 (vascular cell adhesion molecule-I) and fibroneetin and other therapeutic compounds. The invention also relates to the use of such compositions and methods for the control or prevention of disease states in which $\alpha_4\beta_1$ is involved.

6) *Level of skill in the art.* The artisan using Applicants invention would be a chemist with a M.S. pr Ph.D. in chemistry, and having several years of bench experience.

MPEP §2164.01 (a) states, "A conclusion of lack of enablement means that, based on the evidence regarding each of the above factors, the specification, at the time the application was filed, would not have taught one skilled in the art how to make and/or use the full scope of the claimed invention without undue experimentation. *In re Wright*, 999 F.2d 1557,1562, 27 USPQ2d 1510, 1513 (Fed. Cir. 1993)." That conclusion is clearly justified here that Applicant is not enabled for treating the disease mentioned.

Claim Rejections - 35 USC § 112, 2nd paragraph

13. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

14. The scope of "heterocycloalkyl" requires clarification. Applicants' examples in the specification are not limiting. Applicants have not defined these terms with reasonable clarity. See definitions on p. 21 of the specification. Where applicants define terms with a special meaning, they must set out the special definition with "reasonable clarity, deliberateness and precision". Note *Teleflex v. Ficosa*, 63 USPQ2d 1374; *Rexnord Corp v. Laitram Corp.* 60 USPQ2d 1851 and MPEP 2111.01.

The terms are defined with non-limiting examples making them impossible to pin down. For example, when one states C_1-C_4 alkyl, there are a small finite number of possibilities that exist in that set. One ordinarily skilled in the art realizes and

understands this. However when one states, "heterocycloalkyl" optionally substituted and then provides a list of examples and states the list is non-limiting, how can this be considered definite? One skilled in the art could instantly envision well over one hundred ring systems that qualify under this broad, vague definition. Does the applicant wish to claim a thiophene or a triazolopyrimidine? Applicant must narrow such broad terminology by either eliminating such a broad definition or by inserting the specific ring systems they wish to cover into the claim themselves. These arguments also apply to definitions within the specification which contain these terms, such as "heterocyclylalkyl."

In addition, "optionally substituted" also falls under this same argument. In the absence of the specific moieties intended to effect modification by "substitution" or attachment to the chemical core claimed, the term "optionally substituted" renders the claim in which it appears indefinite in all occurrences where the applicant fails to articulate by chemical name, structural formula or sufficiently distinct functional language, the particular moieties applicant regards as those which will facilitate substitution, requisite to identifying the composition of matter claimed. "Substituted" is a vague and indefinite term because there is no set of possibilities clearly defined in the claims and supported by the specification. This argument is applied to all examples such as "optionally substituted heteroaryl," whereby one skilled in the art would have no idea whatsoever what type of compound applicant was trying to claim with such ambiguous claim language. No new matter permitted. Appropriate correction is required.

Claim Rejections - 35 USC § 102

15. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

16. Claims 1-14, 16 and 24 rejected under 35 U.S.C. 102(a) as being anticipated by Biediger, et. al., EP 1203766.

Biediger, et. al. demonstrates the following compound which is the elected species of the restriction requirement:

```
RN   422268-99-3  CAPLUS
CN   Benzenepropanoic acid, β-[[[[1-[(2-chlorophenyl)methyl]-1,2-dihydro-4-
     hydroxy-5-methyl-2-oxo-3-pyridinyl]amino]carbonyl]amino]-4-methyl-,
     (βS)-  (CA INDEX NAME)

Absolute stereochemistry.
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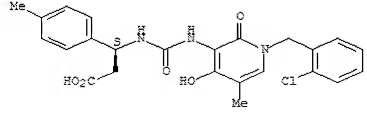


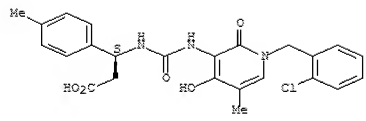
Which is the exact species compound named in Claim 15 of the current application.

17. Claims 1-14, 16 and 24 rejected under 35 U.S.C. 102(e) as being anticipated by Biediger, et. al., U.S. Patent No. 6,972,296.

Biediger, et. al. demonstrates the following compound:

RN 422268-99-3 CAPLUS
CN Benzenepropanoic acid, β-[[[1-[(2-chlorophenyl)methyl]-1,2-dihydro-4-hydroxy-5-methyl-2-oxo-3-pyridinyl]amino]carbonyl]amino]-4-methyl-, (βS)- (CA INDEX NAME)

Absolute stereochemistry.



Which is the exact species compound named in Claim 15 of the current application.

The applied reference has a common inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

Double Patenting

18. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent

and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

19. Claims 1-14, 16 and 24 are provisionally rejected on the ground of nonstatutory anticipatory-type double patenting as being unpatentable over claims 1 and 7 of U.S. Patent No. 6,972,296. Although the conflicting claims are not identical, they are not

patentably distinct from each other because Claims 1 and 7 of U.S. Patent No. 6,972,296 embraces the instant claims 1-14, 16 and 24.

The instant claim differs from the copending claim by a more limited genus than the claim of the copending application. However, it would have been obvious to one having ordinary skill in the art at the time of the invention to select any of the species of the genus of the copending application, including those instantly claimed, because the skilled chemist would have the reasonable expectation that any of the species of the genus would have similar properties and, thus, the same use as taught for the genus as a whole. One of ordinary skill in the art would have been motivated to select the claimed compounds from the genus of the copending application since such compounds would have been suggested by the claims of the copending application. It has been held that a prior art disclosed genus of useful compounds is sufficient to render prima facie obvious a species falling within a genus. *In re Susi*, 440 F.2d 442, 169 USPQ 423, 425 (CCPA 1971), followed by the Federal Circuit in *Merck & Co. v. Biocraft Laboratories*, 847 F.2d 804, 10 USPQ 2d 1843, 1846 (Fed. Cir. 1989).

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Conclusion

20. Claims 1-14, 16, 19 and 24 are rejected.

21. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffrey H. Murray whose telephone number is 571-272-9023. The examiner can normally be reached on Mon.-Thurs. 7:30-6pm EST. If

attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisors, Mr. James O. Wilson can be reached at 571-272-0661. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jeffrey H Murray/
Patent Examiner , Art Unit 1624

/James O. Wilson/
Supervisory Patent Examiner, Art Unit 1624